0069486

SAF-RC-048
100 Area and 300 Area Component of the RCBRA Water Sampling FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	_NB 4/20/06_ INITIAL/DATE
Jeanette Duncan	H9-02	_NB 4/20/06_ INITIAL/DATE

COMMENTS:

SDG J00068 **SAF-RC-048**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 199-N-26

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains 19 Pages

Report No.: 31738

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00068	RC-048	J11J34	J6C210182-1	H1MVN1AA	9H1MVN10	6086474

Certificate of Analysis

Washington Closure Hanford
3190 George Washington Way
Richland, WA 99354

April 17, 2006

Attention: Joan Kessner

SAF Number	:	RC-048
Date SDG Closed	:	March 20, 2006
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	J00068
Data Deliverable	:	45-Day / Summary

CASE NARRATIVE

I. Introduction

On March 20, 2006, one water sample was received at STL Richland (STLR) for chemistry analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
J11J34	H1MVN	WATER	3/20/06

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

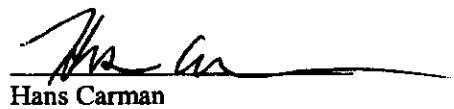
Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The matrix spike and the matrix spike duplicate for this batch both had low recoveries. It was noted by the technician running the analysis that the sample was highly colored, which may have lead to a matrix interference. The LCS, batch blank, sample, sample matrix spike (J11J34), sample matrix spike duplicate (J11J34) and sample duplicate (J11J34) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:



Hans Carman
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u_c *- Combined Uncertainty.*	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c *the combined uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 30-Mar-06

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 31738 **SDG No:** J00068

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
6086474	7196_CR6								
	J11J34								
	H1MVN1AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	2.00E-03	
	H1MVN1AE	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A	2.00E-03	2.00E-03	0.0

No. of Results: 2

STL Richland

rptSTLRchSaSummary2 V4.15.0 A97

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

QC Results Summary
STL Richland STLRL

Ordered by Method, Batch No, QC Type,.

Date: 30-Mar-06

Report No. : 31738

SDG No.: J00068

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
7196_CR6								
6086474 MATRIX SPIKE								
H1MVN1AC	HEXCHROME	1.78E-01 +- 0.00E+00		mg/L	N/A	68%	-0.3	2.00E-03
H1MVN1AD	HEXCHROME	1.91E-01 +- 0.00E+00		mg/L	N/A	73%	-0.3	2.00E-03
6086474 LCS								
H13J01AC	HEXCHROME	5.04E-01 +- 0.00E+00		mg/L	N/A	101%	0.0	2.00E-03
6086474 BLANK QC								
H13J01AA	HEXCHROME	2.00E-03 +- 0.00E+00	U	mg/L	N/A			2.00E-03

No. of Results: 4

STL Richland
rptSTLRchQcSummary V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 30-Mar-06

Lab Name:	STL Richland	**SDG:**	J00068	**Collection Date:**	3/20/2006 11:02:00 AM
Lot-Sample No.:	J6C210182-1	**Report No. :**	31738	**Received Date:**	3/20/2006 2:46:00 PM
Client Sample ID:	J11J34	**COC No. :**	RC-048-373	**Matrix:**	WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6086474	7196_CR6			Work Order: H1MVN1AA			Report DB ID: 9H1MVN10					
HEXCHROME	***2.00E-03***	U		0.0E+00	2.00E-03	mg/L	N/A	*1.*	3/20/06		100.0	
							2.00E-03	*N/A*			ML	

No. of Results: 1 **Comments:**

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

Date: 30-Mar-06

DUPLICATE RESULTS

Lab Name: STL Richland **SDG:** J00068 **Collection Date:** 3/20/2006 11:02:00 AM

Lot-Sample No.: J6C210182-1 **Report No. :** 31738 **Received Date:** 3/20/2006 2:46:00 PM

Client Sample ID: J11J34 **COC No. :** RC-048-373 **Matrix:** WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6086474	7196_CR6			Work Order: H1MVN1AE		Report DB ID: H1MVN1ER			Orig Sa DB ID: 9H1MVN10			
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1.	3/20/06		100.0	
	2.00E-03	U	RPD 0.0			2.00E-03		N/A			ML	

No. of Results: 1 **Comments:**

STL Richland **RPD** - Relative Percent Difference.

rptSTLRchDupV4.1 5.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 30-Mar-06

Lab Name: STL Richland **SDG:** J00068

Matrix: WATER **Report No. :** 31738

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6086474	7196_CR6			**Work Order:** H13J01AA		**Report DB ID:** H13J01AB						
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1.	3/20/06		100.0	
						2.00E-03		N/A			ML	

No. of Results: 1 **Comments:**

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 30-Mar-06

Lab Name: STL Richland **SDG:** J00068

Matrix: WATER **Report No. :** 31738

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6086474	7196_CR6			**Work Order:** H13J01AC			**Report DB ID:** H13J01AS						
HEXCHROME	5.04E-01			0.0E+00	2.00E-03	mg/L	N/A	5.00E-01		101%	3/20/06	100.0	
							Rec Limits:	85	115	0.0		ML	

No. of Results: 1 **Comments:**

STL Richland **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V4.15.0 A97

FORM II

Date: 30-Mar-06

MATRIX SPIKE RESULTS

Lab Name: STL Richland **SDG:** J00068

Lot-Sample No.: J6C210182-1 **Report No. :** 31738 **Matrix:** WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6086474	**Work Order:** H1MVN1AC			**Report DB ID:** H1MVN1CW			**Orig Sa DB ID:** 9H1MVN10						
HEXCHROME	1.78E-01			0.0E+00	2.00E-03	mg/L	N/A	67.57%	2.63E-01		3/20/06	100.0	7196_CR6
	2.00E-03											ML	
Batch: 6086474	**Work Order:** H1MVN1AD			**Report DB ID:** H1MVN1DW			**Orig Sa DB ID:** H1MVN1CW						
HEXCHROME	1.91E-01			0.0E+00	2.00E-03	mg/L	N/A	72.62%	2.63E-01		3/20/06	100.0	7196_CR6
	1.78E-01											ML	

Number of Results: 2

Comments:

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

FORM II

Date: 30-Mar-06

MATRIX SPIKE DUPLICATE RESULTS

Lab Name: STL Richland **SDG:** J00068

Lot-Sample No.: J6C210182-1 **Report No. :** 31738 **Matrix:** WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6086474	7196_CR6			Work Order: H1MVN1AC			Report DB ID: H1MVN1CW			Orig Sa DB ID: H1MVN1DW			
HEXCHROME	1.78E-01			0.0E+00	2.00E-03	mg/L	N/A	67.57%	2.63E-01		3/20/06	100.0	
	1.91E-01	*RPD*	7.2									ML	
Batch: 6086474	7196_CR6			Work Order: H1MVN1AD			Report DB ID: H1MVN1DW			Orig Sa DB ID: H1MVN1CW			
HEXCHROME	1.91E-01			0.0E+00	2.00E-03	mg/L	N/A	72.62%	2.63E-01		3/20/06	100.0	
	1.78E-01	*RPD*	7.2									ML	

No. of Results: 2 **Comments:**

STL Richland RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
rptSTLRchMsDup2 Bias - (Result/Expected)-1 as defined by ANSI N13.30.
V4.15.0 A97

STL

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Work Order Number(s): HIMVN

Lab Sample Numbers or SDG: J00068

Method/Test/Parameter: **Cr+6 in Water / RICH-WC-5003, Rev 7**

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration 1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration 1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis 1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?	✓			✓
2. Were all sample holding times met?	✓			✓
D. QC Samples 1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?		✓		✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?			✓	✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
E. Other			✓	
1. Are all nonconformances included and noted?				✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response:

MS and MSD were recovered low. See NCM.

Analyst: [signature] Date: 3/28/06

Second-Level Review: [signature] Date: 4-17-06

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-048-373	Page 1 of 1

Collector [illegible] F. M. HALL	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location 199-N-26		SAF No. RC-048
Ice Chest No. AFS04055	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment GOV. VEHICLE
Shipped To Severn Trent Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 7N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE J6C210182 J00068

Special Handling and/or Storage

COOL 4C Due: 5/4/06

Preservation	Cool 4C
Type of Container	G/P
No. of Container(s)	1
Volume	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196									
J11J34	WATER	MAR 20 2006	1102	X	HIM/N								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature] F. M. HALL MAR 20 2006	1250	SLOALE [signature] WCH 32006	1250
[signature] SLOALE 32006 1415		TR Edmundson [signature] 3-20-06	1415
WCH TR Edmundson [signature] 3-20-06	1440	DAVID HARDISON [signature] 3/20/06	14:46

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

[redacted] STL

Sample Check-in List

Date/Time Received: 3/20/06 14:40

Client: WASH CLOSURE SDG #: J000108 NA [ ] SAF #: RC-048 NA [ ]

Work Order Number: J0C210182 Chain of Custody # RC-048-373

Shipping Container ID: AFSU4055 Air Bill # N/A

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: 1/2 NA [ ] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [ ] Yes [ ] No [ ]
8. Samples have:
   - ____ tape
   - ✓ custody seals
   - ____ hazard labels
   - ✓ appropriate samples labels
9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

   (Only for samples requiring head space)
10. Sample pH taken? yes NA [ ] pH<2 [ ] pH>2 [✓] adjusted pH [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian [signature] Date: 3/20/06

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 12/05, Rev. 6

3/27/2006 4:29:16 PM

Sample Preparation/Analysis

Balance Id:

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)

Pipet #: _____

Report Due: 05/04/2006

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 6086474 **WATER** **mg/L**

PM, Quote: HC , 27023

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 88EA, 6086474 88EA,

Prep Tech:

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H1MVN-1-AA J6C210182-1-SAMP [redacted] 03/20/2006 11:02		AmtRec: 500ML	#Containers: 1			Scr:	Alpha:	Beta:
2 H1MVN-1-AC-S J6C210182-1-MS [redacted] 03/20/2006 11:02		AmtRec: 500ML	#Containers: 1			Scr:	Alpha:	Beta:
3 H1MVN-1-AD-D J6C210182-1-MSD [redacted] 03/20/2006 11:02		AmtRec: 500ML	#Containers: 1			Scr:	Alpha:	Beta:
4 H1MVN-1-AE-X J6C210182-1-DUP [redacted] 03/20/2006 11:02		AmtRec: 500ML	#Containers: 1			Scr:	Alpha:	Beta:
5 H13J0-1-AA-B J6C270000-474-BLK [redacted] 03/20/2006 11:02		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 H13J0-1-AC-C J6C270000-474-LCS [redacted] 03/20/2006 11:02		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

3/27/2006 4:29:18 PM

Sample Preparation/Analysis

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 05/04/2006

Batch: 6086474 mg/L
SEQ Batch, Test: None

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford Bechtel Hanford, Inc. , HC , 27023

H1MVW1AA-SAMP Constituent List:
HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20
H1MVW1AC-MS Constituent List:
HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20
H1MVW1AD-MSD:
HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20
H13J01AA-BLK:
HEXCHROME RDL:0.002 mg/L LCL: UCL: RPD:
H13J01AC-LCS:
HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

H1MVW1AA-SAMP Calc Info:
Uncert Level ($s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H1MVW1AC-MS Calc Info:
Uncert Level ($s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H1MVW1AD-MSD:
Uncert Level ($s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H13J01AA-BLK:
Uncert Level ($s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H13J01AC-LCS:
Uncert Level ($s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____